



MPF PROGRAM PROPOSED LIGHTERAGE REMIX

30 April 2004

**SEALIFT SUPPORT PROGRAM OFFICE
NAVFACHQ**

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MPF PROGRAM LIGHTERAGE OVERVIEW



Operation Iraqi Freedom Lessons Learned

▪ RRDF Interface with U.S. Army watercraft

- **Problem:** LCU 2000 ramp slides off RRDF module.
- **Goal:** Improved RRDF interface with U.S. Army watercraft.
- **Issues:** LCU 2000 has “rhino horn” to marry with RRDF however, MPF-E ships do not carry appropriate capability to interface.
- **Solution:** Ensure Causeway Off Shore (COS) sections are deployed on all MPF-E vessels as part of 7 section RRDF.
- **Other:** Military Sealift Command has confirmed that we can add (1) COS to each “E” ship without loss of TEU’s.
- **Cost to Execute:** \$155K FY04, \$200K FY05, & \$200K FY06

MPF PROGRAM LIGHTERAGE OVERVIEW



Operation Iraqi Freedom Lessons Learned

Causeway Ferry Optimization:

- **Goal:** Maximize thru-put
 - Larger working footprint (deck space utilization)
 - Greater beaching capability (overcome beach gradient issues)
- **Solution:** Increase length of causeway ferries (CSP+CIN+CBE)
- **Overall Recommendation:** Decrease CSP's & CBE's and add CIN's

MPF PROGRAM LIGHTERAGE OVERVIEW



Depth of Water under the Stern of the Power Modules When CFs are Fully Loaded Based on Beach Gradients from 1:20 up to 1:140 (All depths are in feet)

Type of CF	Size	Length of CF (ft)	Minus 30 Ft of CF Grounded	Length of CF afloat	Gradients													
					1:20	1:30	1:40	1:50	1:60	1:70	1:80	1:90	1:100	1:110	1:120	1:130	1:140	^1:150
					20	30	40	50	60	70	80	90	100	110	120	130	140	150
NL																		
	1+1	180	30	150	7.50	5.00	3.75	3.00	2.50	2.14	1.88	1.67	1.50	1.36	1.25	1.15	1.07	1.00
	1+2	270	30	240	12.00	8.00	6.00	4.80	4.00	3.43	3.00	2.67	2.40	2.18	2.00	1.85	1.71	1.60
	1+3	360	30	330	16.50	11.00	8.25	6.60	5.50	4.71	4.13	3.67	3.30	3.00	2.75	2.54	2.36	2.20
	1+4	450	30	420	21.00	14.00	10.50	8.40	7.00	6.00	5.25	4.67	4.20	3.82	3.50	3.23	3.00	2.80
INLS																		
	1+1	160	30	130	6.50	4.33	3.25	2.60	2.17	1.86	1.63	1.44	1.30	1.18	1.08	1.00	0.93	0.87
	1+2	240	30	210	10.50	7.00	5.25	4.20	3.50	3.00	2.63	2.33	2.10	1.91	1.75	1.62	1.50	1.40
	1+3	320	30	290	14.50	9.67	7.25	5.80	4.83	4.14	3.63	3.22	2.90	2.64	2.42	2.23	2.07	1.93
	1+4	400	30	370	18.50	12.33	9.25	7.40	6.17	5.29	4.63	4.11	3.70	3.36	3.08	2.85	2.64	2.47

Notes: All the numbers in the colored blocks above represent depths of water under the stern of the power module for the corresponding gradient and CF configuration

 Turquoise-colored items represent those gradients for that CF configuration which are satisfactory to support fully loaded operations (greater than 3 feet of water under the keel for NL, and greater than 2 feet of water for INLS)

 Purple-colored items represent those gradients for that CF configuration which are too shallow to support fully loaded causeway ferries conducting offbads (depth of the water is 3 feet or less)

Note: INLS analysis is shown for information purposes only

MPF PROGRAM LIGHTERAGE OVERVIEW



Throughput Analysis:

Center For Naval Analysis Memorandum, (31 March 2004)

“Per your request we examined the MPF cargo offload times resulting from varying mixed of NL lighter sections, and varying beach gradients.

- A proposed alignment that could make one RRDF plus five 3+1 barges and six 2+1 barges. If the RRDF was not constructed, it's sections could be added to the barges to make eleven 3+1 barges.”

**Eleven 3+1 Causeway Ferries provides
squadron offload in 9.1 days through Beach
Gradient of 1:80 improving throughput.**

PROPOSED MPF LIGHTERAGE REMIX



Causeway Ferry Optimization:

Add 26 CIN's and 3 COS's:

-Requirements:

- MPS 1: (8) CIN's (4-AMSEA, 2-Waterman, 2-MAERSK) & (1) COS - E Ship
- MPS 2: (8) CIN's (4-AMSEA, 2-Waterman, 2-MAERSK) & (1) COS - E Ship
- MPS 3: (10) CIN's (2-AMSEA, 2-Waterman, 6-MAERSK) & (1) COS - E Ship
- Total Deletions: (13) CSP's & (13) CBE's

-Implementation Timeline:

- CIN: FY 04 (2), FY 05 (6), FY 06 (10) & FY 07 (8). The first (21) taken from rotational pool and remainder from CBE to CIN conversations.
- COS: FY 04 (1), FY 05 (1), FY06 (1).

MPSRON ONE (Remix)



VESSEL SPECIFICS

	COS	CINs	CBEs	CSPs	HOSE REELS	LARC	SLWTs	LCM-8s
BOBO FLAG (AMSEA)	N/A	2 (4)	4 (3)	4 (3)	3	2	1	2
OBREGON ALT FLAG (WATERMAN)	N/A	2 (4)	4 (3)	4 (3)	3	2	1	2
BAUGH (MAERSK)	N/A	2 (4)	3 (2)	3 (2)	3	N/A	1	1
WILLIAMS (AMSEA)	N/A	2 (4)	4 (3)	4 (3)	3	N/A	1	1
WHEAT "E" (KEYSTONE)	1*	6	N/A	N/A	N/A	N/A	1	N/A

N/L IN THEATER



N/L ONBOARD



LIGHTERAGE @ BIC



Quantities in parens are proposed changes to increase throughput by deploying more CINs.

Non-Flagships are reducing LCM-8s from 2 to 1 during MMCs

*Causeway Offshore Section (COS) column shows requirement 1 COS on each MPF (E) ship/MPSRON to assist LCU 2000 interface w/RRDF.

MPSRON TWO (Remix)



VESSEL SPECIFICS

	COS	CINs	CBEs	CSPs	HOSE REELS	LARC	SLWTs	LCM-8s
BUTTON FLAG (AMSEA)	NA	2 (4)	4 (3)	4 (3)	3	2	1	2
KOCAK ALT FLAG WATERMAN	NA	2 (4)	4 (3)	4 (3)	3	2	1	2
LOPEZ (AMSEA)	NA	2 (4)	4 (3)	4 (3)	3	N/A	1	1
PHILLIPS (MAERSK)	NA	2 (4)	3 (2)	3 (2)	3	N/A	1	1
STOCKHAM E (AMSEA)	1*	6	N/A	NA	NA	N/A	1	NA

N/L IN THEATER



Quantities in parens are proposed changes to increase throughput by deploying more CINs.

N/L ONBOARD



Non-Flagships are reducing LCM-8s from 2 to 1 during MMCs

LIGHTERAGE @ BIC



*Causeway Offshore Section (COS) column shows requirement 1 COS on each MPF (E) ship/MPSRON to assist LCU 2000 interface w/RRDE.

MPSRON THREE (Remix)



VESSEL SPECIFICS

	CO S	CINs	CBE s	CSPs	HOSE REELS	LARC	SLWTs	LCM-8s
LUMMUS FLAG (AMSEA)	N/A	2 (4)	4 (3)	4 (3)	3	2	1	2
PLESS ALT FLAG (WATERMAN)	N/A	2 (4)	4 (3)	4 (3)	3	2	1	2
ANDERSON (MAERSK)	N/A	2 (4)	3 (2)	3 (2)	3	N/A	1	1
BONNYMAN (MAERSK)	N/A	2 (4)	3 (2)	3 (2)	3	N/A	1	1
HAUGE (MAERSK)	N/A	2 (4)	3 (2)	3 (2)	3	N/A	1	1
MARTIN - USNS "E" (OSPREY)	1*	6	N/A	N/A	N/A	N/A	NA	NA

N/L IN THEATER



Quantities in parens are proposed changes to increase throughput by deploying more CINs.

N/L ONBOARD



Non-Flagships are reducing LCM-8s from 2 to 1 during MMCs.

LIGHTERAGE @ BIC



*Causeway Offshore Section (COS) column shows requirement 1 COS on each MPF (E)

ship/MPSRON to assist LCU 2000 interface w/RRDF.

PROPOSED MPF LIGHTERAGE REMIX



Cost Impact

FISCAL YEAR	(ADDED) CIN's	(REMOVED) CSP's	(REMOVED) CBE's	(ADD) COS	COST: REFURBISHMENT	COST: AVOIDED	NET EFFECT	NET COST/SAVINGS
2004	2	1	1	1	285	(165)	COST	\$120
2005	6	3	3	1	602	(501)	COST	\$101
2006	10	5	5	1	890	(845)	COST	\$45
2007	8	4	4		926	(688)	COST	\$238
Total	26	13	13	3	\$2,703	(\$2,173)	INCREASE	\$504

Notes:

MMC Maintenance Cost for CSP \$100K/unit

MMC Maintenance Cost for CIN/CBE \$65K/unit (FY04), \$67K/unit (FY05), \$69K/unit (FY06), \$72K/unit (FY07)

MMC Maintenance Cost for COS \$155K/unit (FY04), \$200K/unit (FY05), \$200K/unit (FY05)

MMC Maintenance Cost for CBE to CIN conversation \$70K/unit

PROPOSED MPF LIGHTERAGE REMIX



Summary

Benefits:

- Maximizes throughput
- Reduces power craft maintenance
- Negligible MPF weight increase
- Less MPF deck space required
- Reduction in manning

Negatives:

- Reduced power craft redundancy
- \$504K to execute over 4 years

PROPOSED MPF LIGHTERAGE REMIX



Weight Impact :

weight-->		CSP 85		CIN 70		CBE 70		SLWT 90		Ship Total		Ship Weight	
Ship	Class	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
Bobo	Amsea	4	3	2	4	4	3	1	1	11	11	850	835
Obregon	Waterman	4	3	2	4	4	3	1	1	11	11	850	835
Baugh	Maersk	3	2	2	4	3	2	1	1	9	9	695	680
Williams	Amsea	4	3	2	4	4	3	1	1	11	11	850	835
Wheat	E-ship	0	0	6	7	0	0	1	1	7	8	510	580
MPSRON 1	Total	15	11	14	23	15	11	5	5	49	50	3,755	3,765
Button	Amsea	4	3	2	4	4	3	1	1	11	11	850	835
Kocak	Waterman	4	3	2	4	4	3	1	1	11	11	850	835
Lopez	Amsea	4	3	2	4	4	3	1	1	11	11	850	835
Phillips	Maersk	3	2	2	4	3	2	1	1	9	9	695	680
Stockham	E-ship	0	0	6	7	0	0	1	1	7	8	510	580
MPSRON 2	Total	15	11	14	23	15	11	5	5	49	50	3,755	3,765
Lummus	Amsea	4	3	2	4	4	3	1	1	11	11	850	835
Pless	Waterman	4	3	2	4	4	3	1	1	11	11	850	835
Anderson	Maersk	3	2	2	4	3	2	1	1	9	9	695	680
Bonnyman	Maersk	3	2	2	4	3	2	1	1	9	9	695	680
Hauge	Maersk	3	2	2	4	3	2	1	1	9	9	695	680
Martin	E-ship	0	0	6	7	0	0	0	0	6	7	420	490
MPSRON 3	Total	17	12	16	27	17	12	5	5	55	56	4,205	4,200
		47	34	44	73	47	34	15	15	153	156	11,715	11,730

Note: CIN Column (New) included 1 COS per squadron increase

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Recommendations:

- **Approve addition of (1) COS per Squadron to improve RRDF capability.**
- **Approve remix of CSP's as proposed.**